



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0406; Product Identifier 2013-NE-30-AD]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2017-07-04, which applies to General Electric Company (GE) GE90-110B1 and GE90-115B turbofan engines with certain high-pressure compressor (HPC) rotor stage 2-5 spools installed. AD 2017-07-04 resulted from reports of cracks in HPC rotor stage 2-5 spool aft spacer arms. Since we issued AD 2017-07-04, GE released a new service bulletin (SB) that increases the number of affected HPC rotor stage 2-5 spools. Additionally, we learned that we inadvertently omitted certain HPC rotor stage 2-5 spools from the applicability of AD 2017-07-04. This proposed AD would require removing certain HPC rotor stage 2-5 spools from service before reaching the new reduced life limit and replacing them with parts eligible for installation. We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, One Neumann Way, Room 285, Cincinnati, OH; phone: 513-552-3272; email: geae.aoc@ge.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0406; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: David Bethka, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2018-0406; Product Identifier 2013-NE-30-AD” at the

beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We issued AD 2017-07-04, Amendment 39-18842 (82 FR 16728, April 6, 2017), (“AD 2017-07-04”), for GE GE90-110B1 and GE90-115B turbofan engines with certain HPC rotor stage 2-5 spools installed. AD 2017-07-04 requires removing these spools from service at times determined by a drawdown plan. AD 2017-07-04 resulted from reports of cracks in HPC rotor stage 2-5 spool aft spacer arms. We issued AD 2017-07-04 to prevent failure of a critical life-limited rotating engine part, which could result in an uncontained engine failure and damage to the airplane.

Actions Since AD 2017-07-04 Was Issued

Since we issued AD 2017-07-04, GE released GE SB GE90-100 SB 72-0714 R01, dated February 16, 2018, for the HPC rotor stage 2-5 spools, which increases the number of affected parts.

Additionally, GE and Boeing provided comments on AD-2017-07-04 that some HPC rotor stage 2-5 spools listed in AD 2013-24-17 (superseded by AD 2017-07-04), were omitted from AD 2017-07-04.

Related Service Information under 1 CFR part 51

We reviewed GE SB GE90-100 SB 72-0499 R01, dated February 5, 2014; GE SB GE90-100 SB 72-0659 R01, dated February 18, 2016; and GE SB GE90-100 SB 72-0714 R01, dated February 16, 2018.

GE SB GE90-100 SB 72-0499 R01 describes procedures for identification and removal from service of HPC rotor stage 2-5 spools that use the original seal tooth coating process. GE SB GE90-100 SB 72-0659 R01 describes procedures for identification and removal from service of HPC rotor stage 2-5 spools that use a modified seal tooth coating process. GE SB GE90-100 SB 72-0714 R01 describes procedures for identification and removal from service of HPC rotor stage 2-5 spools that use the modified seal tooth coating process, without coating between the seal teeth.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain all requirements of AD 2017-07-04. This proposed AD would require removing certain HPC rotor stage 2-5 spools from service at times specified in the required actions section.

Costs of Compliance

We estimate that this proposed AD affects 85 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Paragraph (g)(1) Spools Replacement	0 work-hours X \$85 per hour = \$0	\$229,737	\$229,737	\$5,054,214
Paragraph (g)(2) Spools Replacement	0 work-hours X \$85 per hour = \$0	\$39,048	\$39,048	\$2,460,024

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2017-07-04, Amendment 39-18842 (82 FR 16728, April 6, 2017), and adding the following new AD:

General Electric Company: Docket No. FAA-2018-0406; Product Identifier 2013-NE-30-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2017-07-04, Amendment 39-18842 (82 FR 16728, April 6, 2017) (“AD 2017-07-04”).

(c) Applicability

This AD applies to General Electric Company (GE) GE90-110B1 and GE90-115B turbofan engines with HPC rotor stage 2-5 spools, with:

(1) A serial number listed in either, paragraph 4, Appendix A of GE Service Bulletin (SB) No. GE90-100 SB 72-0499 R01, dated February 5, 2014, in paragraph 4, Appendix A of GE SB GE90-100 SB 72-0659 R01, dated February 18, 2016, or in paragraph 4, Appendix A, of GE SB GE90-100 SB 72-0714 R01, dated February 16, 2018.

(2) A part number (P/N) 351-103-109-0, P/N 351-103-110-0, P/N 351-103-147-0 or P/N 351-103-152-0, with any serial number.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by reports of cracks in HPC rotor stage 2-5 spool aft spacer arms. We are issuing this AD to prevent failure of the HPC rotor stage 2-5 spools. The unsafe condition, if not addressed, could result in uncontained spool release, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Remove from service HPC rotor stage 2-5 spools with serial numbers listed in paragraph 4, Appendix A, of GE SB GE90-100 SB 72-0659 R01, dated February 18, 2016, as follows, or before further flight, whichever occurs later:

(i) For spools with fewer than 4,500 flight CSN as of April 21, 2017, remove before exceeding 5,000 CSN.

(ii) For spools with 4,500 CSN or more but fewer than 5,200 CSN as of April 21, 2017, remove within 500 CIS but not to exceed 5,500 CSN.

(iii) For spools with 5,200 CSN or more but fewer than 5,600 CSN as of April 21, 2017, remove within 300 CIS but not to exceed 5,800 CSN.

(iv) For spools with 5,600 CSN or more but fewer than 5,800 CSN as of April 21, 2017, remove within 200 CIS but not to exceed 5,850 CSN.

(v) For spools with 5,800 CSN or more but fewer than 6,000 CSN as of April 21, 2017, remove within 50 CIS but not to exceed 6,000 CSN.

(vi) For spools with 6,000 CSN or more as of April 21, 2017, remove before the next flight.

(2) Remove from service HPC rotor stage 2-5 spools listed in paragraph (c)(2) of this AD and HPC rotor stage 2-5 spools with serial numbers listed in paragraph 4, Appendix A, of GE SB GE90-100 SB 72-0714 R01, dated February 16, 2018, before exceeding 8,200 CSN, or before further flight, whichever occurs later.

(h) Installation Prohibition

(1) After the effective date of this AD, do not install or reinstall onto any engine, any HPC rotor stage 2-5 spool with a serial number listed in paragraph 4, Appendix A, of GE SB No. GE90-100 SB 72-0499 R01, dated February 5, 2014, or paragraph 4,

Appendix A, of GE SB GE90-100 SB72-0659 R01, dated February 18, 2016, that exceeds 5,000 CSN.

(2) After the effective date of this AD, do not install or reinstall onto any engine, any HPC rotor stage 2-5 spool listed in paragraph (c)(2) of this AD, or HPC rotor stage 2-5 spool with a serial number listed in paragraph 4, Appendix A, of GE SB GE90-100 SB 72-0714 R01, dated February 16, 2018, that exceeds 8,200 CSN.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact David Bethka, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, One Neumann Way, Room 285, Cincinnati, OH; phone: 513-552-3272; email: geae.aoc@ge.com. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on June 19, 2018.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.

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